

IN THE CLAIMS

1. (Original) Functionalized prepolymer (macromer) obtainable by reaction of a prepolymer comprising at least one alcohol, amine, and/or sulfhydryl group, with an unsaturated mono-esterified dicarbonic acid.

2. (Currently Amended) Functionalized prepolymer (macromer) according to claim 1, wherein the prepolymer is end-capped with the unsaturated mono-esterified dicarbonic acid.

3. (Currently Amended) Functionalized prepolymer (macromer) according to claim 1 ~~or claim 2~~, wherein the unsaturated mono-esterified dicarbonic acid is mono-esterified fumaric acid.

4. (Currently Amended) Functionalized prepolymer (macromer) according to ~~any of the claims 1-3~~ claim 1, wherein the unsaturated mono-esterified dicarbonic acid is esterified with a C₁-C₅ alkyl alcohol, ~~preferably an ethyl alcohol~~.

5. (Currently Amended) Functionalized prepolymer (macromer) according to any claim 1 ~~of the claims 1-4~~, wherein the unsaturated mono-esterified dicarbonic acid is fumaric acid monoethyl ester.

6. (Currently Amended) Functionalized prepolymer (macromer) according to claim 1 ~~any of the claims 1-5~~, wherein the prepolymer is chosen from the group consisting of poly(ethylene glycol) (PEG), poly(trimethylene carbonate) (polyTMC), poly(D,L-lactide) (PDLLA), poly(L-lactide) (PLLA), poly(D-lactide) (PDLA), poly(ϵ -caprolactone) (PCL), poly(dioxanone), and combinations thereof.

7. (Currently Amended) Polymer network obtainable by radical polymerization of a functionalized prepolymer (macromer) according to claim 1~~any of the claims 1-6~~.

8. (Currently Amended) Polymer network according to claim 7, wherein the radical polymerization is at least one of ultra-violet (UV) radical polymerization, redox radical polymerization, and~~or~~ heat radical polymerization.

9. (Currently Amended) Method for providing a functionalized prepolymer (macromer), comprising reacting of a prepolymer comprising at least one of at least one alcohol, amine, and~~or~~ sulfhydryl group with an unsaturated mono-esterified dicarbonic acid.

10. (Currently Amended) Method according to claim 9, wherein the at least one of at least one alcohol, amine, and~~or~~ sulfhydryl group is present at the terminus of the prepolymer.

11. (Currently Amended) Method according to ~~claim 9 or claim 10~~, wherein the unsaturated mono-esterified dicarbonic acid is mono-esterified fumaric acid.

12. (Currently Amended) Method according to claim 9~~any of the claims 9-11~~, wherein the unsaturated mono-esterified dicarbonic acid is esterified with a C₁-C₅ alkyl alcohol,~~preferably an ethyl alcohol~~.

13. (Currently Amended) Method according to claim 9~~any of the claims 9-12~~, wherein the unsaturated mono-esterified dicarbonic acid is fumaric acid monoethyl ester.

14. (Currently Amended) Method according to claim 9~~any of the claims 9-13~~, wherein the prepolymer is chosen from the group consisting of poly(ethylene glycol) (PEG), poly(trimethylene carbonate) (polyTMC), poly(D,L-lactide) (PDLLA), poly(L-lactide) (PLLA), poly(D-lactide) (PDLA), poly(ϵ -caprolactone) (PCL), poly(dioxanone), and combinations thereof.

15. (Currently Amended) Method for providing a polymer network comprising radical polymerization of a functionalized prepolymer (macromer) as defined in claim 1 ~~any of the claims 1-6~~.

16. (Currently Amended) Method according to claim 15, wherein radical polymerization is at least one of ultra-violet (UV) radical polymerization, redox radical polymerization, and/or heat radical polymerization.

17. (Currently Amended) Method according to claim 15 ~~or claim 16~~ comprising:

- dissolution of the functionalized prepolymer (macromer) in a suitable solvent or providing a melt of the functionalized prepolymer (macromer); and
- at least one of ultra-violet (UV) radiation, redox, and/or heat treatment of the functionalized prepolymer (macromer).

18. (Currently Amended) ~~Use~~ A method comprising:
using a polymer network as defined in claim 7 ~~or claim 8~~ as a medicament.

19. (Currently Amended) ~~Use~~ A method comprising:
using a functionalized prepolymer (macromer) as defined in claim 1 ~~any of the claims 1-6~~ as a medicament.